

WHAT IS CLAIMED:

1. A system for providing fluid dynamics in a medical procedure, comprising: a treatment device for applying therapeutic treatment to an organ of a living body through pressure-pulse variables, a treatment set including a fluid reservoir, a pump coupled to the fluid reservoir, a supply line for delivering fluid from the pump to the treatment device, and a device associated with the supply line for creating positive pressure in the treatment device, and a control module coupled to the treatment set to independently control the pressure-pulse variables .

2. A system for providing fluid dynamics in a medical procedure, comprising:
a treatment device for applying therapeutic treatment to an organ of a living body, a treatment set coupled to the treatment device, the treatment set including a fluid reservoir and a pump in fluid communication with the treatment device, and a flow restrictor adapted to provide positive fluid pressure in the treatment device, and a control module coupled to the treatment set to control the fluid pressure in the treatment device.

3. A system for providing fluid dynamics in a medical procedure, comprising:
- a treatment device for applying therapeutic treatment to an organ of a living body through pressure-pulse variables,
- a treatment set coupled to the motor controller, the treatment set including
- 5 a pump in fluid communication with the treatment device and a flow restrictor to create and maintain a positive pressure in the treatment device, and a control module operatively coupled to the pump including a motor and a motor controller for controlling the pump.
4. The system of claim 3 wherein the treatment device is a balloon catheter.
- 10 5. The system of claim 3 wherein the pump is a centrifugal pump.
6. The system of claim 3 wherein the motor is an electric motor operatively to the pump by a drive transmitting mechanism.
7. The system of claim 3 wherein the motor is controlled to independently vary the pressure-pulse variables.
- 15 8. The system of claim 3 wherein the treatment set further comprises a fluid reservoir in fluid communication with the pump to supply fluid to the treatment device.

9. The system of claim 3 wherein the treatment set further comprises a pressure-sensing diaphragm upstream from the treatment device.

10. The system of claim 3 wherein the control module further comprises a user-interface device.

5 11. The system of claim 10 wherein the user-interface device provides input to the pump for independent operation of at least one of temperature, mean pulse, pulse amplitude, shape, or frequency of the fluid in the treatment device.

12. The system of claim 3 wherein the control module further comprises motor-control electronics for providing input to the pump for independent operation of at
10 least one of temperature, mean pulse, pulse amplitude, shape, or frequency of the fluid in the treatment device.

13. A treatment catheter system, comprising:

a treatment catheter for applying a pressure-pulse therapy to an organ of a living body through pressure-pulse variables including at least one of fluid
15 pressure pulse, pulse amplitude, pulse shape, and pulse frequency, a treatment set including a pump in fluid communication with a treatment catheter and a flow restrictor associated with the pump to provide positive pressure to the treatment catheter, and a control module operatively coupled to the pump to independently control at least one of the pressure-pulse variables.

14. The treatment catheter system of claim 13, wherein the control module further comprises a motor removably coupled to the pump through a transmitting mechanism, and a motor controller to control the motor.

5 15. The treatment catheter system of claim 14, wherein the motor comprises an electric motor and the transmitting mechanism comprises a removable shaft for driving the pump.

16. The treatment catheter system of claim 13, wherein the treatment set further comprises a motor for driving the pump.

10 17. The treatment catheter system of claim 13, wherein the treatment set further comprises a fluid reservoir upstream from and in fluid communication with the pump.

18. The treatment catheter system of claim 13, wherein the treatment set further comprises a pressure-sensing diaphragm upstream from the treatment device.

15 19. The treatment catheter system of claim 13, wherein the control module further comprises a user-interface device.

20. The treatment catheter system of claim 19, wherein the user-interface device provides input to the pump for independent operation of at least one of the fluid pressure pulse, pulse amplitude, pulse shape, and pulse frequency in the treatment device.

5 21. The treatment catheter system of claim 13, wherein the control module further comprises motor-control electronics for providing input to the pump for independent operation of at least one of the fluid pressure pulse, pulse amplitude, pulse shape, and pulse frequency in the treatment device.

22. A prostatic treatment system comprising:

10 a catheter system including a treatment catheter, a treatment set including a pump for directing fluid to the catheter through a fluid supply line, the fluid supply line having an associated flow restrictor for creating a positive pressure in the treatment catheter, and a user console operatively coupled to the catheter system for remote operation of the catheter system, the user console including a
15 user interface and a controller for controlling the pump.

23. The prostatic system of claim 22, further comprising a transmitting mechanism operably coupled between the user console and the pump to drive the pump.

24. The prostatic system of claim 23, wherein the user console further comprises an electric motor operated by the controller, and wherein the transmitting mechanism comprises a removable shaft for driving the pump.

5 25. The prostatic system of claim 22, wherein the treatment set further comprises a motor for driving the pump.

26. The prostatic system of claim 22, wherein the treatment set further comprises a fluid reservoir upstream from and in fluid communication with the pump.

27. The prostatic system of claim 22, wherein the treatment set further comprises a pressure sensing diaphragm upstream from the treatment device.

10 28. The prostatic system of claim 22, wherein the user console further comprises a user-interface device.

29. The prostatic system of claim 28, wherein the user-interface device provides input to the pump for independent operation of at least one of fluid pressure pulse, pulse amplitude, pulse shape, and pulse frequency in the treatment device.

30. The prostatic system of claim 22, wherein the user console further comprises
motor-control electronics for providing input to the pump for independent
operation of at least one of fluid pressure pulse, pulse amplitude, pulse shape, and
pulse frequency in the treatment device.

5 31. A method of manufacturing a treatment system for treating prostatitis,
comprising:

providing a treatment device for applying a pressure-pulse therapy to an
organ of a living body through pressure-pulse variables including at least one of
fluid pressure pulse, pulse amplitude, pulse shape, and pulse frequency, and

10 providing a user console operatively coupled to the treatment device to
independently control at least one of the pressure-pulse variables.

32. A method of manufacturing a treatment system for treating prostatitis,

comprising;

providing a treatment device to apply therapeutic treatment to an organ of
a living body by applying a fluid pressure-pulse therapy to an organ of a living
5 body through pressure-pulse variables including at least one of fluid pressure
pulse, pulse amplitude, pulse shape, and pulse frequency, providing a treatment
set operably coupled to the treatment device to deliver treatment fluid to the
treatment device, providing a flow restrictor associated with the treatment set for
creating a positive pressure in the treatment device; and providing a control unit
10 to independently control at least one of the pressure-pulse variables.

33. The method of claim 32, further providing a closed-loop treatment set.

34. The method of claim 32, further providing an open-loop treatment set.

35. The method of claim 32, further providing a transmission device between the
15 control unit and the treatment set.